Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Onshore Holdings LLC
Well Name/Number: Grebe 5-1H
Location: SE SE Section 5 T10N R33E
County: Rosebud**, MT; Field (or Wildcat)** W/C

Air Quality

(possible concerns)
Long drilling time: No, 25 to 35 days drilling time.
Unusually deep drilling (high horsepower rig): No, a triple derrick drilling rig to drill a vertical pilot hole to 5676' TD, Otter Formation. Then if shows warrant to plug back and kickoff to drill a 11,597'MD/5255'TVD Heath Formation single lateral horizontal well test.
Possible H2S gas production: None anticipated.
In/near Class I air quality area: No class I air quality area.
Air quality permit for flaring/venting (if productive) Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
_X_ Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: No special concerns – using triple drilling rig to drill a vertical pilot hole to 5676' TD, Otter Formation. Then if shows warrant to plug back and kickoff to drill a 11,597'MD/5255'TVD Heath Formation single lateral horizontal well test. If there are gas gathering systems in the area it is recommended that associated gas be gathered. If no gas gathering systems in the area, associated sweet gas and H2S gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, vertical pilot hole to 5676' and intermediate casing hole will be drilled with oilbased invert drilling fluid (4682-'5582'). Horizontal lateral will be drilled with brine (5582-11,597'). Surface hole will be drilled with freshwater (0-4150'), rule 36.22.1001.
Surface drainage leads to live water: No, closest drainages are unnamed ephemeral tributary drainages to Rattlesnake Creek, adjacent to the southwest corner of this location and about 1/8 of a mile to the northeast from this location. Stock pond is about 7/8 of a mile to the northwest of this location within the unnamed ephemeral drainage.
Water well contamination: No water wells within 1 mile radius or further from this location. This well will set 9 5/8" surface casing to 4150' and cement to surface. Well will be drill with oil based invert drilling fluids from base of surface casing to about 5,676' TVD pilot hole, into the Otter formation. Well will evaluated. If shows warrant pilot hole will be plugged back and kicked off and drilled horizontally into the Heath Formation to 11,597'MD/5255'TVD well test.
Porous/permeable soils: No, silty "gumbo" clay soils.
Class I stream drainage: No Class I stream drainages.
Mitigation:

___ Lined reserve pit
_X_ Adequate surface casing
__ Berms/dykes, re-routed drainage
X Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
X Other: Lined cuttings pit will be utilized with a impervious synthetic liner of a minimum 12 mil thickness.

Comments: Freshwater mud system to be used on surface hole. Freshwater mud system to be used from surface to 4150', rule 36.22.1001. Drill out of surface casing and drill a vertical pilot hole with oil based invert drilling fluids to 5676' TD , Otter Formation. If decision is made to drill horizontally, well will be plugged back and kicked off to drill the Intermediate casing hole with oil based invert drilling fluid (4682-'5582'). Horizontal lateral will be drilled with brine (5582'-11,597'). Oilbased drilling fluids will be recycled. Brine fluids will be disposed of at a commercial SWD disposal. Freshwater drilling fluids can be evaporated or disposed of a commercial SWD disposal. Freshwater drilled cuttings, oilbase cuttings and brine cuttings will be allowed to dry in the lined cuttings pit, prior to pit closure. Pit solids will be left in the lined pit and backfilled with at least 4' of cover when dry. No concerns.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No live water stream crossings. Crossing only ephemeral drainages.
High erosion potential: Yes possible high erosion potential on steep cut slope, moderate cut, up to 13.4' and small fill, up to 4.4', required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, a large location, 300'X350' size required.
Damage to improvements: Slight, surface use is grazing land.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
___ Other: _____

Comments: Access will be from existing State Highway, 12 and existing lease road. Access road to be built from existing lease road into location is about 2238'. Well cuttings (freshwater, oil base and brine) will buried in the lined cuttings pit on the wellsite. Lined cuttings pit will backfilled with 4' of cover when dry. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: No residences within 1 mile radius in any direction from this location. The town of Sumatra, Montana is about 2.5 miles to the southeast from this location.
Possibility of H2S: None anticipated.

Size of rig/length of drilling time: Triple derrick drilling rig, about 25 to 35 days drilling time.

Mitigation:

_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: _Operational BOP (5,000 psig rated annular, double ram, flanges and choke manifold) and adequate surface casing should mitigate any problems, rule 36.22.1014. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Threatened or endangered species identified is the Black Footed Ferret, Interior Least Tern and Pallid Sturgeon. Candidate species are the Greater Sage Grouse and Sprague's Pipit. NH tracker website only lists four (4) species of concern: Black-tailed Prairie Dog, Greater Sage Grouse, Great Plains Toad and Plains Spadefoot.

Mitigation:

__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Private surface grazing land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other:_____

Comments: _Private surface grazing land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

__ Substantial effect on tax base

__ Create demand for new governmental services
__ Population increase or relocation
Comments: Well is a wildcat, until production is established no social or economic impact can be assessed.

Remarks or Special Concerns for this site

Well is a wildcat vertical pilot hole test to 5676' TD, Otter Formation. Then if shows warrant to plug back and kickoff to drill a 11,597'MD/5255'TVD Heath Formation single lateral horizontal well test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: June 22, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website
(Name and Agency)
Rosebud County water wells
(subject discussed)
June 22, 2013
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Rosebud County
(subject discussed)
June 22, 2013
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T10N R33E
(subject discussed)
June 22, 2013
(date)

Montana Cadastral Website

(Name and Agency)
Surface Ownership and surface use Section 5 T10N R33E
(subject discussed)
June 22, 2013
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: __ _____
Others present during inspection: __ _____